CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 95-034

SITE CLEANUP REQUIREMENTS FOR:

PILKINGTON BARNES HIND

for the property located at

895 KIFER ROAD
SUNNYVALE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

1. **Site Location**: The site is located at 895 Kifer Road, between San Lazaro Avenue and Commercial Street, in Sunnyvale. Located on the site is a large building, which contains space for a laboratory, storage, manufacturing, and offices. Hazardous waste storage facilities are also located on the site. Areas surrounding the building are paved. Adjacent properties are developed for commercial and light manufacturing use. Residential areas are located within one quarter mile of the site.

2. **Site History**: Sola/Barnes Hind has owned the site since 1955, and operated an ophthalmic products research and manufacturing facility at the site from 1955 to 1989. In 1993, the name of the company was changed to Pilkington Barnes Hind. Activities at the site generated a variety of hazardous wastes. As a result of subsurface soil investigations by Sola/Barnes Hind in 1987, volatile organic compounds (VOCs) were detected at the site. VOCs may have been utilized at the facility.

3. **Named Dischargers**: Pilkington Barnes Hind, as owner of the site and former operator of the facility, and based on the company's potential use of chemicals found in the groundwater, is named as a discharger. If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding that party's name to this order.

4. **Site Hydrogeology**: The site is flat, and slopes gently toward the north and San Francisco Bay. Calabazas Creek, approximately .75 miles east of the site, is the

nearest surface water. The site is underlain by fluvial deposits consisting of interbedded, laterally discontinuous layers of clay, silt, sand, and gravel. A shallow groundwater zone, generally found between 15 and 30 feet below the ground surface, is referred to as the A-zone aquifer. Groundwater in the A-zone is migrating northeasterly. A deeper groundwater zone, found between 35 and 50 feet below the ground surface is referred to as the B-zone aquifer. Groundwater in the B-zone is also migrating northeasterly. The hydrogeologic conditions encountered at the site are typical of those found at other sites in the vicinity.

5. **Remedial Investigation**: Soil and groundwater samples obtained at the site indicate that VOCs, including trichloroethylene, 1,1,1-trichloroethane, dichloroethylene, methylene chloride, and perchloroethylene, have impacted soil and groundwater at the site. Two potential source areas have been identified: one near the western site boundary; the other near the northeastern site boundary. Levels of soil contamination across the site are relatively low (less than 1 ppm). However, groundwater contamination has been detected in the A-zone groundwater at levels significantly higher then drinking water standards (up to 4,900 ppb of TCE). A-zone groundwater pollution levels at some areas of the site are higher then those found in upgradient off-site areas. Low to non-detectable levels of contamination have been detected in the B-zone.

   Groundwater pollution at the Pilkington Barnes Hind site extends to the west, northwest, and north site boundaries. Significant levels of groundwater pollution have also been detected in the regions adjacent and upgradient of the site. Remedial investigations beyond the Pilkington Barnes Hind site boundaries are currently being (or have been) conducted by other dischargers in the region.

6. **Interim Remedial Measures**: In June 1994 Pilkington Barnes Hind began extracting groundwater at the north site boundary to prevent groundwater contamination from migrating off-site. As of September 1994, 320,000 gallons of groundwater were extracted, treated utilizing carbon absorption canisters, and discharged to surface waters. The effectiveness of the interim groundwater extraction system has yet to be evaluated. Because of the low levels of soil contamination detected at the site, no soil remedial soil remedial measures have been implemented or required.

   Further interim remedial measures may need to be implemented at this site to reduce the threat to water quality, public health, and the environment posed by the discharge of waste and to provide a technical basis for selecting and designing final remedial measures.

7. **Adjacent Sites**: Several sites exist in the vicinity of the Pilkingon Barnes Hind site that are sources of soil and/or ground water pollution. These sites include Hewlett-Packard, located at 974 E. Arques Street; the City of Sunnyvale Corporation Yard, located at 221 Commercial Street, Philips Semiconductors (formerly Signetics),

located at 100 San Lucar Court; and Mohawk Laboratories, located at 932 Kifer Road. A number of other sites located immediately east and west of the Pilkington Barnes Hind site are also considered potential sources of groundwater contamination.

The Board adopted Site Cleanup Requirements for the Sunnyvale Corporation Yard site in August 1994. The Board revised Site Cleanup Requirements for Mohawk Laboratories in February 1995. Investigation and cleanup at other sites in the area will also be required as appropriate.

8. **Regulatory Status**: The Board adopted Order No. 89-026 (Site Cleanup Requirements) on February 15, 1989. Work completed pursuant to the order included characterization of A-zone and B-zone groundwater pollution, and a proposal for interim remedial measures. The intent of this Order is to revise Order 89-026 to include requirements for evaluating the performance of the interim groundwater remedial actions, and to evaluate final remedial action alternatives.

9. **Basin Plan**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986, and the State Board approved it on May 21, 1987. The Board has amended the Basin Plan several times since then. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

   The potential beneficial uses of groundwater underlying and adjacent to the site include:

   a. Municipal and domestic water supply
   b. Industrial process water supply
   c. Industrial service water supply
   d. Agricultural water supply

   At present, there is no known use of groundwater underlying the site for the above purposes.

10. **Other Board Policies**: Board Resolution No. 88-160 strongly encourages dischargers of extracted, treated groundwater from site cleanups to reuse it or discharge it to the sanitary sewer.

    Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels.

11. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the

highest level of water quality which is reasonable if background levels of water quality cannot be restored. Non-background cleanup levels must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

12. **Basis for 13304 Order**: The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

13. **Cost Recovery**: Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

14. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

15. **Notification**: The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

16. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State

is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. TASKS

1. EVALUATION OF INTERIM REMEDIAL ACTIONS

COMPLIANCE DATE: April 15, 1995

Submit a technical report acceptable to the Executive Officer evaluating the performance of the interim groundwater remedial measures. The report should also evaluate modifications to the system, and propose modifications as appropriate.

2. IMPLEMENTATION OF INTERIM REMEDIAL ACTION MODIFICATIONS

COMPLIANCE DATE: June 15, 1995

Submit a technical report acceptable to the Executive Officer documenting the implementation of any modifications to the interim groundwater remedial measures proposed pursuant to Task B.1.

3. PROPOSED FINAL REMEDIAL ACTIONS AND CLEANUP STANDARDS

COMPLIANCE DATE: March 15, 1996

Submit a technical report acceptable to the Executive Officer containing:

a. Results of the remedial investigation
b. Evaluation of the installed interim remedial actions
c. Feasibility study evaluating alternative final remedial actions
d. Risk assessment for current and post-cleanup exposures
e. Recommended final remedial actions and cleanup standards
f. Implementation tasks and time schedule

Items b and c should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through c should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

4. **Delayed Compliance:** If the discharger is delayed, interrupted, or prevented from meting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

C. PROVISIONS

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good O&M:** The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery:** The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records:** In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may

potentially exist, or in which any required records are kept, which are relevant to this Order.

b. Access to copy any records required to be kept under the requirements of this Order.

c. Inspection of any monitoring or remediation facilities installed in response to this Order.

d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

5. **Self-Monitoring Program**: The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor/ Consultant Qualifications**: All hydrogeologic documents (plans, specifications, and reports) shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

   a. City of Sunnyvale
   b. Santa Clara County Health Department
   c. Santa Clara Valley Water District

9. **Reporting of Changed Owner or Operator**: The discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the

discharger shall report such discharge to the Regional Board by calling (510) 286-1255 during regular office hours (Monday through Friday, 8:00 to 5:00).

A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order:** This Order rescinds Order No. 89-026.

12. **Periodic SCR Review:** The Board will review this Order periodically and may revise it when necessary. The discharger may request revisions and upon review the Executive Officer may recommend that the Board revise these requirements.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 15, 1995.

Steven R. Ritchie
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13267 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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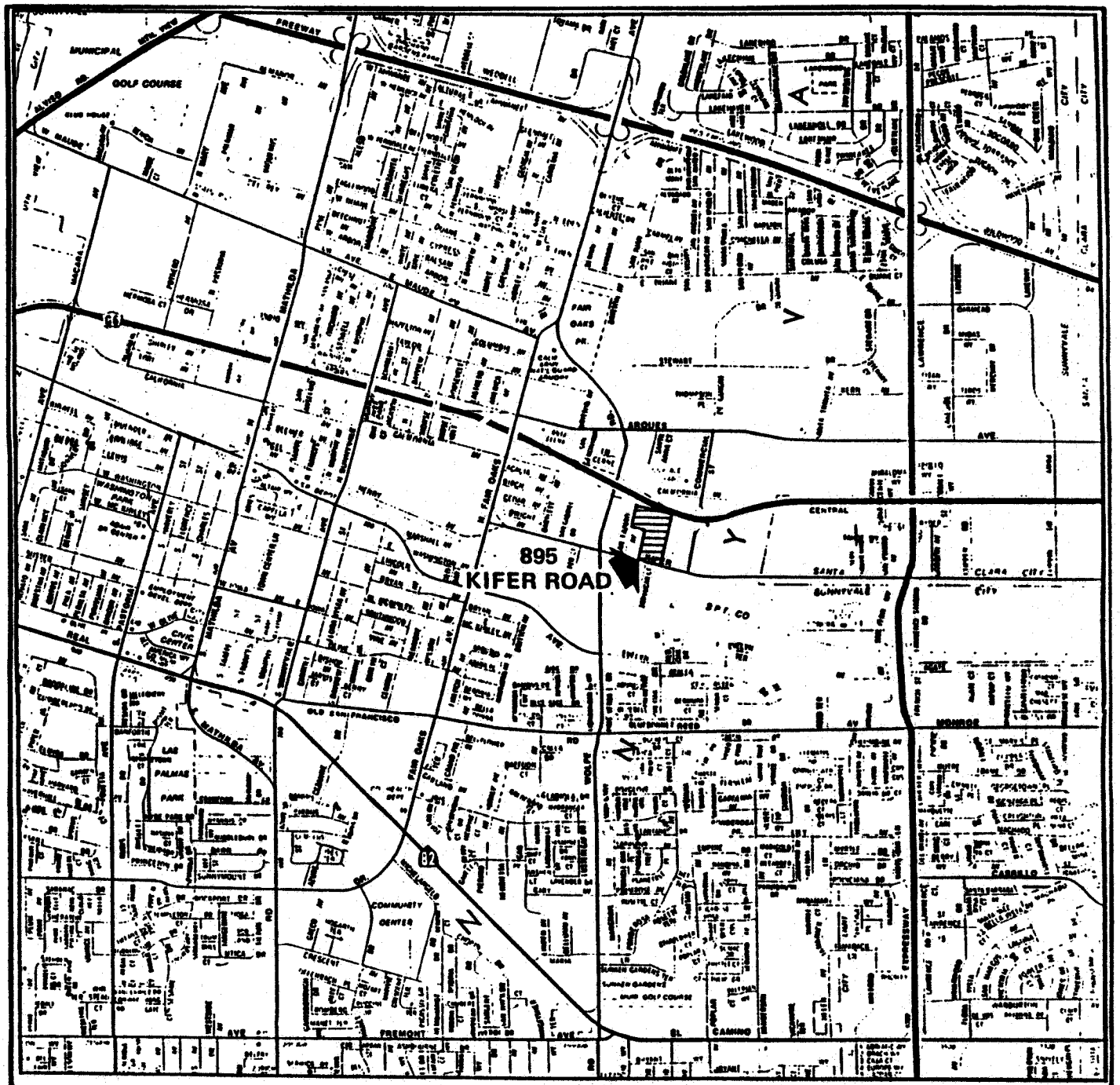
Attachments: Site Map
Self-Monitoring Program



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0 2500 5000

Approximate Scale in Feet

Legend:

Denotes Approximate Site Boundary

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

LOCATION MAP

SOLA/BARNES-HIND
895 KIFER ROAD FACILITY
SUNNYVALE, SANTA CLARA COUNTY

DRAWN BY: MYM	DATE: 12/27/88	DRWG. NO. 008

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

PILKINGTON BARNES HIND

for the property located at

895 KIFER ROAD
SUNNYVALE
SANTA CLARA COUNTY

1. **Authority and Purpose:** The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. 95-034 (site cleanup requirements).

2. **Monitoring:** The discharger shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following schedule:

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
BHW1	SA	8010	IMW4*		
BHW2	SA	8010	RD1*		
BHW3	SA	8010	RD2*		
BHW4	SA	8010	RD5*		
BHW5	SA	8010	RD6*		
BHW6B	SA	8010	RMW1*		
BC18*			RMW2*		
BC1*			RMW3*		
IMW2*			SVE-1*		
IMW3*					

Key: Q = Quarterly
SA = Semi-Annually
A = Annually
8010 = EPA Method 8010 or equivalent
8020 = EPA Method 8020 or equivalent
8240 = EPA Method 8240 or equivalent
8010/8240 = EPA Method 8240 in lieu of 8010 for fourth quarter
* = groundwater elevation measurements only

The discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Quarterly Monitoring Reports**: The discharger shall submit quarterly monitoring reports to the Board no later than 30 days following the end of the quarter (e.g. first quarter report due April 30). The first quarterly monitoring report shall be due on April 30, 1995. The reports shall include:

a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the fourth quarterly report each year.

c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used and detection limits obtained for each reported constituent. Historical groundwater sampling results shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil

vapor extraction), expressed in units of chemical mass per day and mass for the quarter. Historical mass removal results shall be included in the fourth quarterly report each year.

e. Status Report: The quarterly report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following quarter.

4. **Violation Reports**: If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The discharger shall notify the Board prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Steven R. Ritchie, Executive officer, hereby certify that this Self-Monitoring Program was adopted by the Board on February 15, 1995.

Steven R. Ritchie
Executive Officer